# SAMPLING

## IN THIS APPENDIX


| TOPIC | SEE PAGE: |
|---|---|
| OVERVIEW | H-1 |
| TYPES OF SAMPLING | H-1 |
| SAMPLE DOCUMENTATION | H-3 |
| CRA – Interim Guidance for Sampling at Small Institutions | H-4 |
| SAMPLE SIZE TABLE | H-10 |
| REFERENCES | H-11 |


## OVERVIEW

This Appendix provides minimum sampling standards to assist the examiner in selecting a universe of loans to review for compliance with applicable consumer protection and fair lending laws and regulations.

## TYPES OF SAMPLING

### Judgemental Sampling

It is believed that judgemental sampling is normally more efficient and effective than statistical sampling in identifying the types of compliance violations that may exist in a loan portfolio. Consequently, it is contemplated that judgemental sampling will be used to the maximum extent possible.

The examiner should judgementally sample a few of each type of loan transactions with different characteristics from the various loan categories. If disclosure, or other type violations, are apparent in any type of transaction, the sample size of that transaction type should be expanded to a level where the examiner is satisfied, after investigating the apparent cause or source of the violations, that a pattern or practice of such violations either does or does not exist.

In determining the transaction types to be sampled, the following characteristics, which are not necessarily all-inclusive, should be considered:

- Maturity
  - -- Closed-End (Time and Demand Loans)
  - -- Open-End (Credit Cards, Home Equity Lines of Credit)

## TYPES OF SAMPLING (cont'd)

### Judgemental Sampling (cont'd)

- Secured (Collateral)
  - -- Automobile
  - -- Real estate (home improvement, residential mortgage, construction)
  - -- Unsecured

- Repayment Terms
  - -- Demand
  - -- Single payment
  - -- Installment (monthly, quarterly, annual, balloon payment, long- and short-odd days to the first payment

- Insurance
  - -- Credit life, accident and health insurance
  - -- Property insurance
  - -- Vendors' single interest insurance
  - -- Mortgage insurance (MGIC)

- Finance Charges
  - -- Simple interest
  - -- Add-on or discount interest
  - -- 360/365-day method

- Prepaid Finance Charges
  - -- Real estate points
  - -- Origination fees
  - -- Documentation fees

- Variable-Rate Feature
  - -- Regular
  - -- Discounted

It should be noted that a particular loan may exhibit several of the above characteristics, all of which may be reviewed at the same time. Characteristics of loan transactions cited as violations at the previous examination should also be included in the judgemental samples to ascertain the effectiveness of corrective action. Loans selected for review would normally be limited to those originating since the date of the previous examination or within two years of the current examination, whichever period is shorter.

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### Statistical Sampling

Statistical sampling may be appropriate in certain instances. For example, when numerous, seemingly unrelated violations are noted, the examiner may wish to obtain a statistical sample to determine the probable extent of such violations throughout a loan portfolio. A volume of such violations sufficient to indicate a breakdown in established procedures could be considered a pattern or practice warranting reimbursement.

## TYPES OF SAMPLING (cont'd)

### Statistical Sampling (cont'd)

For a statistical sample, the examiner should select for review 25 loans consummated since the date of the previous examination or within two years, whichever period is shorter.

The universe of loans sampled, determined in any reasonable and expedient manner, should be divided by 25 to arrive at the interval between loans to be selected for review. Every "nth" loan in the universe should then be selected based on the interval determined, after commencing with the initial loan chosen at random within the first interval.

Randomness in selecting the first loan can be assured, for example, by taking the last five digits from the serial number appearing on any dollar bill and, as a decimal, multiplying this random fraction, by the interval previously determined to arrive at the number of the first loan to be selected. All fractional numbers should be rounded up to the next whole number. In the event a particular loan is a commercial loan or a consumer loan consummated prior to the selection period, the examiner should go to the next succeeding loan, as necessary, until an appropriate loan is selected. The interval count, however, should resume from the first inappropriate loan selected.

## SAMPLE DOCUMENTATION

Since the presence of "a clear and consistent pattern or practice" is a prerequisite to most findings of a reimbursable Truth In Lending violation (Section 108(e)(2) of the Act), it is vital for the examiner to document the results of the examination sample. This information may be particularly important if a financial institution requests relief from reimbursement following an examination. Therefore, the examiner must provide clear, accurate, and complete information about the sample and its results.

### Truth in Lending Reimbursable Violations

For each type of reimbursable Truth in Lending violation, the examiner shall provide the following information about the sample(s) drawn and the results:

- Type of loan involved (for example, residential mortgages)
- Special characteristics (for example, mortgages with credit life insurance)
- Number of loans sampled containing the special characteristics
- Number of loans with reimbursable violations

Since the institution's entire lending activity of a given type is potentially subject to Truth In Lending reimbursement, it is important to place the impact of reimbursement in perspective.

## SAMPLE DOCUMENTATION (cont'd)

The examiner must provide a best estimate of:

- The number of loans, of the specific type/characteristics, made by the bank during the adjustment period (see "Corrective Action Period" below), and:
  - -- Currently outstanding
  - -- Paid off

- The universe subject to reimbursement

  This should be in terms of both the number of loans and the estimated amount of reimbursement. A brief explanation of how these estimates were determined should also be given.

When credit insurance premiums have not been included in calculations for APR and finance charge disclosures, information must be provided concerning the "penetration rate". The examiner would provide the percentage of loans which have the credit insurance coverage for each specific loan type/characteristics involved. The "penetration rate" provides a further indicator for evaluating the presence of a pattern or practice.

Similar documentation would be required for violations of other consumer protection laws and regulations.

*NOTE: Please refer to the Fair Lending section of this manual, for guidance on sampling procedures for reviewing Fair Housing.*

## CRA

### Interim Guidance for Sampling at Small Institutions

Examiners will need to estimate three proportions in connection with CRA examinations of small institutions:

- Loans inside and outside of an assessment area

- Loans in low, moderate, middle, and upper income geographies in an assessment area

- Loans to low, moderate, middle, and upper income borrowers within an assessment area

Examiners should interpret the estimated proportions based on the performance context and other information obtained during the examination.

Under the revised regulation, small institutions are not required to collect data for CRA examination purposes. However, some small institutions may choose to provide data regarding their loans, including the census tract locations and borrower incomes, similar to the data requirement for large institutions.

## CRA (cont'd)

### Interim Guidance for Sampling at Small Institutions (cont'd)

Some institutions may even provide a summary of their distribution of loans. In this case, if the examiner is able to verify the institution's information, the examiner may use the data supplied by the institution and will not need to perform sampling to evaluate the institution's CRA performance.

| Sampling at Small Institutions |
| --- |
| 1. Determine one or more major product lines from which to select a sample, taking into account factors such as the institution's business strategy and its areas of expertise.<br><br>As an initial matter, examiners may select for review for these purposes among the same categories of loans that are to be used when reviewing large institutions, for example, mortgages, small business and farm loans, and consumer loans.<br><br>*NOTE: The major consumer product categories are defined in the CRA regulation as home equity, motor vehicle, other secured, unsecured and credit card.* |
| 2. Determine the universe of loans for each category.<br><br>*NOTE: The total number of loans, both originated and purchased by the institution, for a major product category, will be defined as the "universe" of loans.*<br><br>In order to determine the number of loans for the sample (known as the sample size), examiners should know the number of loans in the universe, even if this requires them to count the number of loans manually.<br><br>This universe can include any of the following:<br><br>• Total number of loans since the previous examination<br>• Total number of loans in the previous year<br>• Total number of loans in the previous six months<br><br>At a minimum, the universe of loans should cover at least the activity in the six months prior to the examination. It should cover at least the prior year if the number of loans made in the last six months is less than 50. If the universe of loans for the previous year for any particular product category is less than 50, then **all** loans made or purchased since the previous examination for that product should be included in the universe. |

## CRA (cont'd)

### Interim Guidance for Sampling at Small Institutions (cont'd)

3. Determine the number of loans to be sampled.

   Use the table included at the end of this Appendix to determine the appropriate number of loans to be selected for each product category being examined. The table indicates the sample size based on the universe of loans for each product and the desired confidence and precision levels.

   Initially examiners should select samples based on a 90% confidence interval, with a plus or minus 10% level of precision. This means that there is a 90% chance that the results from the sample will be within 10% of the true proportion, for whichever criteria is being evaluated.

   *NOTE: Sampling software is being tested that would require a 90% confidence level with a plus or minus 5% level of precision. However, we will use the 10% level of precision until such time as the software, or another methodology, can be implemented. A higher precision tolerance was selected for these interim procedures because the time involved for a more precise level does not seem justified by the greater precision of the results obtained.*

   For loan products or institutions that require further investigation or are undergoing greater scrutiny for any reason, a larger sample may be necessary because examiners may need results with a higher degree of reliability. Examiners may use the 95% confidence level from the table at the end of this Appendix for guidance when a larger sample is necessary.

**How to Select a Random Sample**

Once the number of loans to be sampled is determined, the examiner should select these loans from a list of loans unique to that product, if one is available from the institution.

If no unique list or other sorting system is available, the examiner should restrict the random sampling procedures below to each product category that can be segregated.

1. To select files, calculate the interval to use for sampling by dividing the number of loans in the universe by the number of loans that will be in the sample and rounding up to the nearest whole number.

## CRA (cont'd)

### Interim Guidance for Sampling at Small Institutions (cont'd)

| Information to be Gathered for Each Loan Record |
|---|
| 1. Once the loans for each sample have been identified, record relevant loan information into a spreadsheet.<br><br>Data for each loan should include, at a minimum:<br><br>• Institution's internal loan ID number<br>• Loan type<br>• Loan dollar amount<br>• Location – in cases where the census tract of the loan is not readily available, examiners are expected to geocode the loans (see instructions below)<br>• For the home related and consumer loans sampled, the borrower income that was used to approve the loan<br>• For the small business and small farm loans sampled, the business or farm's revenue |
| 2. When data are missing, attempt to obtain this information through discussions with institution representatives.<br><br>Obtaining information through these discussions can significantly reduce the amount of records in the sample with "missing data" and thereby increase the validity of each sample.<br><br>*NOTE: Pilot testing of these procedures revealed that missing data can be a serious problem. Specifically, experience shows that a large number of small business or small farm loans may use P.O. Box addresses instead of street addresses and that consumer loan files may not include borrower income information.* |

| Geocoding Loan Locations |
|---|
| 1. If the institution has not already geocoded each loan, by determining the Metropolitan Statistical Area (MSA) (if applicable), state, county, and census tract or Block Numbering Area (BNA), the examiners will need to determine this for the loans in the sample. |

**CRA (cont'd)**

**Interim Guidance for Sampling at Small Institutions (cont'd)**

**Calculating Proportion Estimates**

1. Calculate the proportion estimates as itemized in the examination procedures.

   *NOTE: The software being tested will calculate these proportions. Until the software or another product is implemented, examiners will need to manually calculate these proportions.*

**Comparisons of Credit Extended Inside and Outside of the Assessment Area(s)**

2. Tabulate the following proportions:

   - Percentage of the number of loans (by product type) inside and outside the assessment area(s)
   - Percentage of the dollar amount of loans (by product type) inside and outside the assessment area(s)

**Distribution of Credit within the Assessment Area(s)**

3. In accordance with the examination procedures, examiners should tabulate the following proportions based on **only those loan records from the sample that are within the assessment area(s)** for each product category:

   - Number and percentage of loan originations (by product type, if applicable) in low, moderate, middle, and upper income geographies
   - Dollar amount and percentage of loan originations (by product type, if applicable) in low, moderate, middle, and upper income geographies
   - Number and percentage of loan originations (by product type, if applicable) to low, moderate, middle, and upper income borrowers
   - Dollar amount and percentage of loan originations (by product type, if applicable) to low, moderate, middle, and upper income borrowers
   - Number and percentage of loan originations to small businesses/farms of different sizes (by revenue)
   - Dollar amount and percentage of loan originations to small businesses/farms of different sizes (by revenue)

Examiners should follow the guidelines in the CRA examination procedures for analyzing the results from the sampling and, ultimately, assigning a rating to the institution's lending performance.

**CRA (cont'd)**

**Interim Guidance for Sampling at Small Institutions (cont'd)**

## SAMPLE SIZE TABLE

| Sample Size Table | | |
|---|---|---|
| Full Width of Confidence Interval +/– 10% Precision | | |
| No. of Originations and Purchases | Sample Size | |
| | 95% | 90% |
| 10 | 10 | 10 |
| 50 | 43 | 40 |
| 100 | 74 | 67 |
| 200 | 118 | 101 |
| 300 | 147 | 121 |
| 400 | 167 | 135 |
| 500 | 183 | 144 |
| 600 | 195 | 152 |
| 700 | 204 | 157 |
| 800 | 212 | 162 |
| 900 | 218 | 166 |
| 1,000 | 224 | 169 |
| 1,250 | 234 | 175 |
| 1,500 | 242 | 179 |
| 1,750 | 247 | 182 |
| 2,000 | 252 | 184 |
| 2,250 | 255 | 186 |
| 2,500 | 258 | 188 |
| 2,750 | 261 | 189 |
| 3,000 | 263 | 190 |
| 3,500 | 266 | 192 |
| 4,000 | 269 | 193 |
| 4,500 | 271 | 194 |
| 5,000 | 272 | 195 |

## FDIC LAW, REGULATIONS, & RELATED ACTS

**Applicable Rules**

None

**Advisory Opinions**

None

**Statements of Policy**

None

## DCA MEMORANDA

None

## FINANCIAL INSTITUTION LETTERS (FIL)

None

## OTHER

FFIEC Interim Guidance for Sampling at Small Institutions, "Red Book", Tab M